Washington State Department of Transportation

INCIDENT MANAGEMENT • TRAVELER / SHIPPER INFORMATION • ROUTINE TRAFFIC OPERATIONS • PUBLIC SAFETY ISSUES • NETWORK / FACILITY MANAGEMENT • SNOW AND ICE MANAGEMENT

PUBLIC SAFETY ISSUES • REGULATORY / ENFORCEMENT STREAMLINING • INCIDENT MANAGEMENT • CONSTRUCTION / MAINTENANCE WORK ZONE OPERATIONS • ROUTINE TRAFFIC OPERATIONS

Low Cost Enhancement Safety Program

The Low Cost Enhancement Safety Program identifies low cost fixes to the highway system two ways. The first is safety problem identification through High Accident Location lists. The second is requests or concerns made by citizens. This is the most effective way to quickly address safety needs with low cost fixes. A good interim solution to a congestion and safety problem on the off-ramp from I-90 to SR 900 was to re-stripe the lanes and change the signal to allow two lanes to turn left. This improvement resulted in less congestion on the ramp and the freeway and most importantly reduced the number of crashes from 27 per year to 5 per year.

Two lane stripe

Three lane re-stripe

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Washington State Department of Transportation

Bottom Line

To manage and operate Transportation Systems better, follow these objectives:

- Operations must become a priority
- Performance must be monitored
- Effectiveness must be communicated

September 2003

Transportation Operations

"An integrated program designed to make the best use of existing highway infrastructure through provision of systems and services that preserve and improve performance."

Why the need to Operate/Manage Transportation Systems?

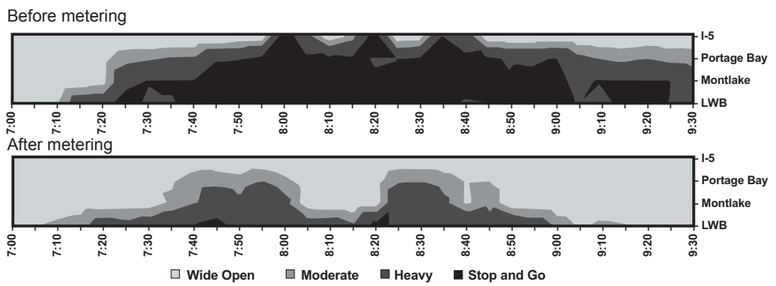
Operating and managing effectively provides a cost effective way to squeeze the most capacity out of the existing transportation system. Effective operations provides the following:

- Better understanding of causes/cures to congestion/delay/reliability and safety
- Increased accountability for actual performance
- Enhanced emergency management/security needs

Ramp Meters

Ramp meters control access to the freeways through the use of ramp signals to increase the flow on the mainline and decrease crashes. Before and after studies on SR520 show a 30% decrease in rear end and sideswipe crashes. Studies also show a 20 m.p.h. speed increase and 10% increase in traffic flow.

SR 520 Eastbound Morning Congestion, I-5 to Lake Washington Blvd.

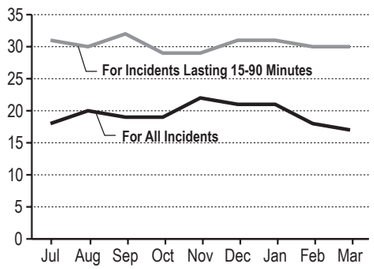


Incident Response *Clearing Roads. Helping Drivers*

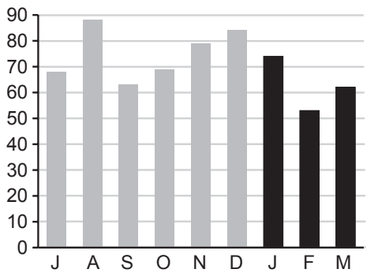
A critical strategy to address congestion is to quickly clear incidents that cause congestion by the use of Incident Response Teams. The extensive surveillance and monitoring capability in place on Puget Sound highways allows WSDOT to respond swiftly to incidents that interfere with traffic flow. Incidents that last more than 15 minute typically have multiple responders and/or jurisdictions (e.g., WSP, Registered Two Truck Operators, etc.) working collaboratively to clear the scene. WSDOT is taking a closer look at these types of incidents in order to find ways to further reduce the time it takes to clear these incidents.

The measures for incident response are response time and clearance time.

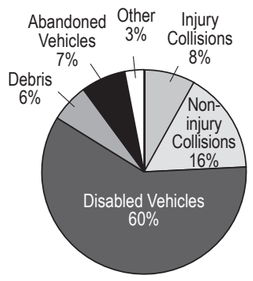
Incident Response:
Average Clearance Time (Minutes)
July 2002 to March 2003



Number of Over 90-Minute Incidents
July 2002 to March 2003



Type of Responses



Incident Response personnel are available 24-hours a day, seven days a week to provide traffic control, traffic re-routing, mobile communications, and assistance in incident clearance and clean up. This also includes helping motorists with a flat tire, jump starts, a gallon of gas, and many other types of motorist assistance.

Incident Response Customer Feedback:

"The WSDOT person was outstanding and ensured my safety. Gladly pay taxes to ensure this service."
"The Incident Response Team is an example of our Tax dollars being well spent!"
"The service was wonderful... Great experience all around. Other states need to provide this also."

Freight

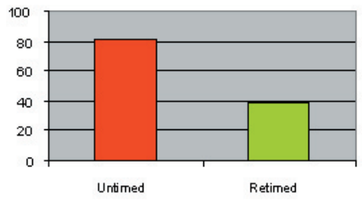
Truckers want quick and reliable trip times on major freight routes such as I-5, I-90, U.S. 97, and U.S 395. WSDOT's Commercial Vehicles Information Systems and Networks (CVISN) uses a transponder system to allow trucks to be identified without leaving the highway, much like an electronic license plate. The Weigh In Motion (WIM) system is imbedded in the roadway about a half-mile ahead of the weigh station and weighs each truck passing over it.

- Fatal truck collisions reduced by 26%
- Truck safety inspections increase by 25-30%

Both these statistics can be attributed, in part, to the ability of Washington State Patrol to concentrate safety efforts on unsafe and illegal carriers, while the safe and legal carrier is allowed to by-pass the weigh stations.

Signal Operations

Benefits of WSDOT Signal Retiming
Example: SR 161 @ 160th St.



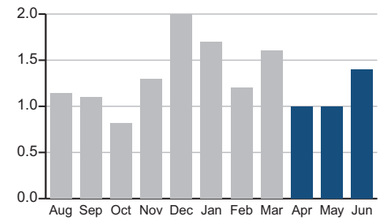
The congestion on arterials with traffic signals is greatly affected by how effectively the signals are coordinated with each other and the signal timing. WSDOT measures it's performance in accomplishing a proactive re-timing of traffic signals on a scheduled basis to minimize the delays experienced by motorists. WSDOT also works with cities and counties to develop signal coordination plans for areas where adjacent signals affect the flow of traffic.

Washington is testing adaptive signal control in areas of high congestion to adjust how the signal operates in real time based on the changing flow of real time traffic rather than preset patterns based on average traffic.

Traveler Information

WSDOT collects large amounts of detailed operational data that is very useful for managing the highway system. But WSDOT is not the only decision maker whose actions determine how efficiently the highway system operates. Hundreds of thousands of individual motorists make millions of decisions every day that, taken together, result in the traffic patterns (and congestion) measured by WSDOT.

Traveler Website Daily Usage
Average Daily Page Views, in Millions



WSDOT provides information to travelers on the state's roads and highways, on Road and Traffic Conditions, Incidents and Work Zones, Weather and special events.

"I was traveling north at the time the fuel tanker exploded...a new electronic sign was flashing "Accident in Lynnwood. All Lanes closed." That sign saved me from being stuck in bad traffic –Thank you D.O.T."

How do we deliver the message?

- Highway Advisory Radio (HAR)
- Dynamic Message Signs (DMS)
- Web
- 511 / 800-695-ROAD
- Media

Technology for Transportation

The WSDOT Intelligent Transportation System plan identifies current projects and maps the needs of technology throughout the state. Applying technology to transportation will allow us to:

- Actively manage the transportation system to improve efficiency.
- Measure and monitor transportation system performance.
- Improve the safety of the transportation system.
- Provide transportation system users with information.

Border Crossings

A significant amount of truck movement has to contend with traveling to and crossing the U.S./Canada border. ITS projects focus on border crossings with test internet-based information systems such as web cameras to help truckers get into the ports and the E-seal project replaces paperwork and lets the "good guys" go through customs faster.

Snow and Ice Management

During winter months, the primary focus of the Maintenance program is to provide safe and reliable driving conditions by plowing and/or sanding the roadway when snow and/or ice has accumulated. The WSDOT has two automated de-icing systems statewide.

ARROWS is WSDOT's **A**utomated **R**eal-time **RO**ad **W**eather **S**ystem. ARROWS is a state of the art one-stop weather information system that is tailored to assist maintenance efforts by snow and ice management. The system uses the web to show reports that forecast precipitation and predicts road surface temperatures. The system also uses WSDOT Real Weather Information System Cameras to display current weather imageries.